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IN THE

Supreme Court of the United States

OCTOBER TERM, 1973

No. 73-6741

SAFE FLIGHT INSTRUMENT CORPORATION,
a New York corporation,
Petitioner,

v.

McDONNELL DOUGLAS CORPORATION, a Maryland corporation, and SPERRY RAND CORPORATION, a Delaware corporation,
Respondents.

PETITION FOR *CERTIORARI*
TO THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

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Respondents.

PETITION FOR *CERTIORARI* TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

Petitioner respectfully prays that a Writ of *Certiorari* to review the Judgment entered on April 27, 1973, by the United States Court of Appeals for the Ninth Circuit.

OPINIONS BELOW

The Opinion of the Court of Appeals for the Ninth Circuit in this case is unreported in the Official Reports, but is reported at 178 U. S. P. Q. 13 and its Opinion is attached hereto, beginning at A2. The Opinion of the District Court for the Central District of California is unreported in the *Federal Supplement,* but is reported at 169

U. S. P. Q. 328 (A17). There was never a formal Opinion in the District Court and the Appendix items which are attached as A18 through A39, is a reproduction of the Findings of Fact and Conclusions of Law entered along with the Judgment and a Memorandum to Counsel, dated October 15, 1970 (A40). In addition there is attached a decision on the same patent, constituting the Findings of Fact, Conclusions of Law and Final Judgment of the United States District Court for the Western District of Washington, dated respectively December 11, 1968 (A47) and July 31, 1969 (A56).

JURISDICTION

The Judgment of the Court of Appeals filed April 27, 1973, was the subject of a timely Petition for Rehearing and that Petition for Rehearing was denied by Order of the Court filed September 13, 1972 (A15). An Order Staying Issuance of the Mandate has been entered, provided this Petition be filed on or before October 20, 1973 (A16). This Petition is being filed by October 20, 1973. The jurisdiction of this Court is invoked under 28 U. S. C. § 1254(1).

QUESTIONS PRESENTED

1. Under the principles and the rationale of this Court in *Blonder-Tongue Laboratories, Inc.* v. *University of Illinois Foundation,* 402 U. S. 313 ("Blonder"), should a Final Judgment of validity of U. S. Patent No. 3,043,540 be determinative as to subsequent proceedings on the same issues involving the same patent?

2. Under the circumstances of this case in which Respondent McDonnell Douglas Corporation (hereinafter

MDC) fostered infringement by two separate infringers and participated to some extent in the first action (which resulted in a Final Judgment of the validity and infringement of U. S. Patent No. 3,043,540, hereinafter '540), should the principles of *Blonder* apply to preclude a relitigation of the issue of validity at all, or, at least to the extent that the same evidence is relied upon in the subsequent proceeding?

3. Is it a denial of due process for the U. S. Court of Appeals for the Ninth Circuit to refuse to remand a case to the lower Court, for purpose of holding a hearing with respect to the matter of raising and deciding the issue of collateral estoppel, when this Court, by overruling *Triplett* v. *Lowell,* 297 U. S. 638 ("Triplett"), drastically altered the law with regard to the effect to be accorded prior proceedings involving the same patent after the second trial and Judgment but before the decision by the Ninth Circuit?

4. Where this Court, in a major reversal with regard to the requirement of mutuality for collateral estoppel in patent cases, directs that the Court in second litigation must decide in a principled way whether or not it is just and equitable to allow a plea of estoppel in the case before it at a time, after the Final Judgment in the District Court and pending the briefing and hearing of the case in the Court of Appeals, should not justice and equity require the Court of Appeals to remand the case to the District Court for the kind and quality of a hearing as described in *Blonder* at pp. 332-334?

5. Should the Ninth Circuit Court of Appeals be required to maintain a uniformity of decisions within the District Courts of its own Circuit where the identical patent

has been subject of two (2) identical trials and two (2) directly opposing decisions with regard to the matter of validity on the identical evidence, particularly where the decisions of the Ninth Circuit manifestly show lack of uniformity?

CONSTTITUTIONAL PROVISIONS AND STATUTES INVOLVED

This case involves Article I, Section 8, Clause 8 of the Constitution (A1); Section 103 of the Patent Act of 1952, 35 U. S. C. § 103 (A1); and Section 282 of that Patent Act, 35 U. S. C. § 282(A1).

STATEMENT OF THE CASE

Petitioner in this action brought suit in July 1967 in the United States District Court for the Western District of Washington involving the patent here in suit (and two (2) other patents, which are no longer relevant to these proceedings). That case, in the Western District of Washington (Seattle case) involved as defendants, United Control Corporation and its successor UC Liquidating Corporation, collectively referred to herein as UCC. That suit, as acknowledged by the Ninth Circuit Court of Appeals, related to actions by UCC in contracting for the manufacture of aircraft devices covered by the Petitioner's '540 patent for installation in McDonnell Douglas Corporation's (hereinafter MDC) model DC-9 aircraft. In connection with the manufacture and sale of those devices, UCC agreed to indemnify MDC for any damages MDC might be required to pay for patent infringement. After a lengthy trial, the District Court in that Seattle case entered its own Findings of Fact, Conclusions of Law and a Judgment, to the effect that the '540 patent was valid and that the same

claims involved in the instant litigation were infringed by the defendants in that case (A47). A Judgment for Petitioner, consistent with these determinations was entered on December 11, 1968. There was an Appeal to the Ninth Circuit Court of Appeals. Subsequently, Petitioner requested that the Appeals be remanded to the Seattle Court, in order to enable Petitioner's Motion for a New Trial and Other Relief to be heard. The Ninth Circuit, on May 27, 1969, in an unreported Order, granted the requested remand. On July 31, 1969, an Agreement was entered into between the parties settling all issues in the Seattle case. Part of that Agreement was that a Final Judgment (A56) be entered with regard to the validity of the '540 patent, thus affirming the Seattle Court's final decision in that regard. The then pending Appeals to the Ninth Circuit were dismissed.

In the meantime, the instant litigation (Los Angeles case) was initiated on December 30, 1968. That involved MDC and Sperry Rand Corporation (hereinafter Sperry) with regard to a separate aircraft instrument which, at that time, was being procured by MDC from Sperry against a performance specification for MDC DC-10 aircraft which called for infringement of Petitioner's '540 patent.

Operating under the strictures of this Court in the *Triplett* case, *supra,* plaintiff conceded that MDC and, in turn its new privy Sperry, were entitled to their day in Court with respect to the validity of the '540 patent. In the numerous Counts which are the subject of the Amended Complaint, and hence the issues which were tried, Counts One and Two involved jointly MDC and Sperry with regard to the specific matter of the infringement by MDC and Sperry of the device being procured for MDC's model DC-10 aircraft. Count Three was against MDC alone for having procured, used and resold the UCC devices which

had already been the subject of a Final Judgment against UCC. Petitioner conceded, under the law as it then existed, that both MDC, with respect to Count Three, and Sperry and MDC with respect to Counts One and Two, were entitled to their full day in Court.

Accordingly, there was a trial, truncated, split up and very confusing to counsel and the Court, of the issues with respect to Counts One and Two of the Complaint in the instant action. Following the trial in that case, the Court prepared a Memorandum to Counsel (A40-46) and following oral argument eventually entered the Defendant's Second Amended Proposed Findings of Fact and Conclusions of Law in the form as indicated in Appendix A18-37.

The Final Judgment (A38) in the instant litigation was entered on March 4, 1971.

Thereafter, and while this case was on Appeal to the Ninth Circuit Court of Appeals, this Court decided the *Blonder* case, *supra.* As a part of the Appeal proceeding, Petitioner attempted to raise the principle of the *Blonder* case as a basis for requesting the U. S. Court of Appeals for the Ninth Circuit to remand the case to the District Court for a hearing of the type described by this Court in *Blonder* at pp. 332-334, *supra.*

Part of the purpose of raising that issue on the Court of Appeals had to do with the fact that Petitioner had filed a Cross Motion for Summary Judgment, following a Motion by MDC for a Partial Summary Judgment on Count Three of the Amended Complaint in this action. In view of then existing law, under this Court's decision in *Triplett, supra,* Petitioner felt that there was no choice, as long as MDC insisted on its day in Court, but that Petitioner accept that MDC was entitled to a separate trial, until such time as MDC elected to take the benefits of the Final Judgment rendered against its indemnitor UCC.

Thus, during the Appeal Petitioner raised, and sought to have decided, the matter of MDC's being bound by the decision of validity and infringement with respect to Count Three, i.e., the action by Petitioner against MDC alone for its procurement of the UCC devices. Petitioner's Motion was denied by the Los Angeles Court and that denial was affirmed by the U. S. Court of Appeals for the Ninth Circuit. Part of the reason for the denial by the Ninth Circuit was that Petitioner had not raised, and therefore had not preserved the collateral estoppel issue in the District Court. A further reason, as indicated in the footnote at A11, was that the full record of the Seattle case was not before either the Los Angeles Court or the Court of Appeals.

The Ninth Circuit remanded the case for further proceeding in respect to Count Three (the Complaint by Petitioner against MDC alone for procurement of UCC infringing devices) and the other Counts which relate to unfair competition, which remain pending and undecided by the Los Angeles Court.

Petitioner thus finds itself in the position that with respect to UCC and the devices which it manufactured and sold to MDC, the '540 patent is valid and infringed and further proceedings involving MDC are directed with respect to those matters. However, with regard to MDC and Sperry and devices procured for the model DC-10 aircraft, the patent, in a separate decision by the Los Angeles Court, is invalid and not infringed. There is thus within the same Circuit, two directly conflicting decisions by two separate District Courts which, on the same evidence, come to exactly the opposite conclusions.

These matters were brought to the attention of the Ninth Circuit Court of Appeals and that Court has, in the

following language, declined to deal with that specific problem:

> "We decline to approach the problem in this way. It is true, as defendants concede, that prior adjudications as to validity of a patent 'are entitled to respectful consideration and in doubtful cases they are strongly persuasive.' *Ritchie* v. *Lewis-Browning Mfg. Co.*, 196 F. 2d 434, 436-437 (5th Cir. 1952). It was on this theory that the district court, in the case before us, admitted in evidence the judgment, findings of fact and conclusions of law entered in the Seattle case. We have no reason to believe that the district court in our action failed to accord these records of the Seattle case the weight to which they are entitled.[5]
>
> "But the respect which should be accorded prior adjudications as to validity of a patent does not, absent estoppel running against the parties to the prior litigation, supplant the primary duty of a court to dispose of cases according to the law and the facts of the particular case before it."

See Ritchie, supra, at 437.

> "Our function on appeal is consonant with this view. Moreover, it would not be practicable for us to enter into an appraisal of the relative soundness of the two sets of findings. The record of the Seattle case is not before us. The parties have argued pro and con as to the differences between the

[5]At the outset of the present trial, the district court announced that if it had a strong view concerning the validity of the patent, it would not be influenced by the finding as to validity in the Seattle case, but that if the court found the issue to be in doubt, the Seattle findings "would constitute make-weight."

> evidence in the two records, but we have no basis for evaluating their differing appraisals . . ." (A7-8).

Petitioner had specifically raised this issue, as acknowledged by the Ninth Circuit, in the following language:

> "At the outset of its argument concerning these findings of fact, Safe Flight observes that the questioned findings are 'completely inconsistent and directly contrary' to the findings entered in the Seattle case, and postures the problem as one of determining which of the two sets of findings are clearly erroneous under Rule 52(a), F. R. Civ. P." (A7).

Both of the District Courts below had jurisdiction of the case pursuant to the Patent Laws of the United States, Act of July 19, 1952, Ch. 950, 6 STAT 792 *et seq.;* Title 35 U. S. Code, § 1, *et seq.,* more particularly 35 U. S. C. §§ 271, 381; and 28 U. S. C. § 1338(a). The Court of Appeals had jurisdiction pursuant to 28 U. S. C. § 1291.

ARGUMENT AND REASONS FOR GRANTING THE WRIT AS TO QUESTIONS 1 THROUGH 4

This Court, in the *Blonder, supra,* case has announced important changes in the law with regard to the treatment to be accorded to previously tried patent cases. It has decided that where a patentee has had a full and fair opportunity to obtain a determination of the validity of his patent in a previous proceeding, that, unless certain requirements are met, the patentee is subject to the doctrine of collateral estoppel and a separate infringer, in a subsequent case, may plead collateral estoppel as a bar.

This case presents the exact inverse of the decision in *Blonder.* These questions have not been decided by this

Court but constitute a vitally important area of the law which is totally unsettled. In some case in the near future this Court will have to deal with the other edge of *Blonder's* "sword". Taking the language from *Blonder* and changing only the word "invalidity" to "validity", the following would appear.

> "First assuming that a perfectly sound judgment of *validity* [invalidity] has been rendered in an earlier suit involving the patentee, a second infringement action raising the same issue and involving much of the same proof has a high cost to the individual parties. The patentee is expending funds on litigation to protect a patent which is, by hypothesis, *valid* [invalid]. These monies could be put to better use, such as further research and development. The alleged infringer—operating as he must against the presumption of validity—is forced to divert substantial funds for litigation that is wasteful." *Blonder-Tongue, supra,* 91 Sup. Ct. 1434, 1447.

The word "invalidity" has been changed to "validity" but neither reason nor equity or justice would make it appear why the principles which constitute the basis for the *Blonder* decision, should not apply with the same force and effect that the "sword" of *Blonder* can be used by a subsequent infringer against the patentee whose previous trial has met all of the requirements laid down by the *Blonder* decision.

This is particularly applicable in the circumstances of this case, where the same party, i.e., MDC, procured the separate infringements, first by UCC and then subsequently by Sperry. It is more relevant even in the situation here where both District Courts decided the validity of the '540

patent pursuant to 35 U. S. C. § 102 and § 103, relying on the identical evidence.

It is respectfully submitted that unless there is a prejudice against patents, the Courts, including this Court and the Ninth Circuit Court of Appeals and other Courts of Appeal, should not be permitted to subject a patentee to multiple trials where his patent has been held valid, until some Court, prejudiced though it may be against patents, concludes that the patent is invalid. Under the law, following the *Blonder* decision, a patentee, in effect, has only one chance if his patent is held invalid. On the other hand, a patentee is subject to any number of subsequent infringers, any one of which may be lucky enough to find a Court who will, whether on the same evidence or additional evidence, conclude that the patent is invalid. It is not the thrust of this Petition to attempt to argue the other set of circumstances in which substantial new evidence, either with respect to the issue of validity or a substantially different infringement, is to be precluded by a prior determination of validity and infringement. But at least as to the issue of validity, where the evidence is demonstrably identical the patentee, under the principles and for the same reasons and logic given in *Blonder* should not be subject to a separate and a new trial, or a series of trials, until such time as a Court is ultimately persuaded, for whatever reasons, whether it be prejudice or otherwise, to rule that the patent is invalid.

Thus the questions presented in Questions 1 through 4 above, raise a very important issue if the patent system is to remain viable. Unless patentees are to be treated as separate and apart from the rationale and principles in *Blonder* when their patents have been held valid, then there is no reason why *Blonder's* decision, as long as all of the carefully laid out requirements are met, should not be fully

as applicable to a previous decision after a full and complete trial with regard to the issue of validity and, in any circumstance, at least relitigation of that issue should be precluded, absent a cogent showing of new evidence or a showing of the failure, of the first Court to decide the issue, to fully and completely comprehend the subject matter of the patent involved.

Much of the progress of this Country, and its technological position, is based on the patent system as it has functioned. Many of the decisions of this Court and of Courts of Appeal and District Courts have gone a long way to undermine the effectiveness of this Country's ability to compete with foreign countries having lesser patent standards. Citation to adverse comments by Justices of the Supreme Court and by other Judges could be cited as authority for the above proposition. It seems that whereas there is a statutory presumption of validity, 35 U. S. C. § 282, there is a judicial presumption of invalidity. This may be understandable, when the conflict between the Anti-Trust Laws of the United States and the Patent Laws come into play. However, where a patentee has, in a complete trial, had presented against him the most cogent evidence and has obtained a determination which is final, that the patent involved is valid, it seems most inequitable now to subject that same patentee to multiple trials, until some other infringer is able to persuade some other Court to hold that patent invalid.

For all of the reasons given above, it is of paramount public importance to patentees and to companies who are assignees of patentees, that their contributions to the advance and progress of the useful arts be protected against multiple trials, in the same manner that infringers are protected against multiple trials by patentees who have, in a full and fair trial, had their patents declared invalid.

ARGUMENT AND REASONS FOR GRANTING THE WRIT AS TO THE FIFTH QUESTION

To some extent the reasons for granting the Writ with respect to this question are identical with those offered above. Clearly this matter was raised in the Court of Appeals and the Court of Appeals directly declined to consider it. Any reasonable comparison between the Findings of Fact and Conclusions of Law entered by the Seattle Court and the Los Angeles Court, clearly shows the direct contradiction between the two cases, as it regards the validity of the '540 patent in suit.

It should be remembered that the case in Los Angeles was tried during the period of the time when *Triplett, supra* was the law of the land. It was therefore not unreasonable for the Petitioner not to have raised or preserved the argument of collateral estoppel during that trial and the argument of the various Motions, including the Cross Motion for Summary Judgment made by Petitioner against MDC, previous to the trial of this action.

However, it amounts to a deprivation of due process of law for the Court of Appeals to refuse to Remand this case to the District Court for further proceedings, in accordance with the principles announced in *Blonder,* when the *Blonder* decision was decided after the entry of Final Judgment by the Los Angeles Court. Thus, the District Court in Los Angeles felt impelled to decide this case completely on its own with no or little reference other than "make weight", to the decision by the Seattle Court. In view of that circumstance, it is not surprising that the whole record of the Seattle case was not introduced and argument was not had with regard to the matter of MDC's (and its new privy, Sperry) being collaterally estopped to assert invalidity of the '540 patent on the same evidence.

However, when this Court decided that mutuality was no longer a requirement in *Blonder*, after the Final Judgment in the Los Angeles case was entered, the least that the Court of Appeals should have done was to return the case to the Los Angeles Court for the kind of hearing that is prescribed in the *Blonder* decision.

Petitioner respectfully submits to this Court that had the Court of Appeals followed that procedure, which it had ample precedent to do as shown by *Ceramic Tilers Supply, Inc.* v. *Tile Council of America,* 378 F. 2d (9th Cir. 1967) a contrary result would have prevailed. Thus, in that case, as well as the other cases in other Circuits, for which citation is not required, following this Court's ruling in *Graham* v. *John Deere,* 383 U. S. 1 (1966), the Ninth Circuit and other Circuit Courts returned cases to the District Courts for rulings in light of the *Graham* decision.

Here there can be no question that *Blonder* fundamentally changed the law and the rights of parties to patent litigation. The Ninth Circuit Court should have returned the case to the Los Angeles Court with permission for Petitioner to file the complete record of the Seattle case and to obtain the kind of hearing and the kind of determination as prescribed in the *Blonder* decision. Only then would the Court of Appeals and subsequently this Court, have before it the basis on which to fully rule with regard to the validity, once and for all, of the '540 patent which is here in suit.

It is curious enough that the Court of Appeals has permitted the current situation in which the '540 patent is valid and infringed with respect to a Final Judgment in the Seattle case and invalid and non-infringed with regard to a Final Judgment in the Los Angeles Court. But, beyond that, the Ninth Circuit Court of Appeals is often inconsistent in its rulings in applying the *Graham* case. Compare *Reeves Instrument* v. *Beckman Instruments, Inc.,* 444 F. 2d

263 (9th Cir. 1971) with *Regimbal et. al.* v. *Scymansky et. al.*, 444 F. 2d 333 (9th Cir. 1971). As has been stated by the authors in Patent Law Perspectives 1971 Developments, Section A1(1), at pp. 37-42:

> "One of the finest judicial treatments of the law of nonobviousness ever written, in our opinion, appeared in *Reeves Instrument Corp.* v. *Beckman Instruments, Inc.* wherein the Ninth Circuit affirmed the trial court's holding of validity. One week earlier, a different Ninth Circuit panel wrote about the worst opinion ever written on nonobviousness in *Regimbal* v. *Scymansky* in which the lower court's holding of invalidity was affirmed with reasoning which itself demonstrated its own illogic and untutored conceptions. The two cases jointly show the schizophrenic dichotomy in patent law which *Anderson's Black-Rock* blithely encouraged, i.e., the mutual application of the doctrine that inventions are patentable when nonobvious and the doctrine that combination-of-known-elements type inventions are patentable (or are inventions) only when they are super-nonobvious (or only when they are inventions)."

The above quotation shows that depending upon the panel that one obtains in the Ninth Circuit, when a combination of known elements of a patent is involved, on the one hand the Ninth Circuit properly interprets the *Anderson's Black-Rock*[1] decision of this Court, along with the *A & P*[2] doctrine, but in other cases require that combination of

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[1] *Anderson's Black-Rock, Inc.* v. *Pavement Salvage Co.*, 396 U. S. 57 (1969).

[2] *Great Atlantic & Pacific Tea Co.* v. *Supermarket Equipment Corp.*, 340 U. S. 147 (1950).

known elements type of inventions are patentable only if they are super-nonobvious.

One of the other clear errors of law by the Court of Appeals and by the Los Angeles District Court, is to stress improperly a single element of the combination as opposed to the combination as a whole (35 U. S. C. § 103) in this case whereas that issue has properly been interpreted in the *Reeves Instrument* case, *supra.*

In order that there be uniformity of decision within the Ninth Circuit of the two District Courts which have ruled on the '540 patent's validity, and, in order that there be some uniformity with regard to the rulings of law on validity of combination of known elements type of patents in the Ninth Circuit, this Court ought to grant the Writ and to resolve this important conflict.

CONCLUSION

For the reasons stated above and to resolve the important questions left unanswered by this Court's decision in *Blonder,* this Petition for *Certiorari* to the U. S. Court of Appeals for the Ninth Circuit should be granted.

Respectfully submitted,

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No. 73-

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APPENDIX TO PETITION FOR A WRIT OF *CERTIORARI* TO THE UNITED STATES COURT OF APPEALS FOR THE NINTH CIRCUIT

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CONSTITUTIONAL AND STATUTORY PROVISIONS

Constitution

Article 1, Section 8, Clause 8. Patents and copyrights

"To promote the Progress of Science and useful Arts, by securing for limited Times to Authors and Inventors the exclusive Right to their respective Writings and Discoveries;"

Patent Laws

"§ 103. Conditions for patentability; non-obvious subject matter

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made."

"§ 282. Presumption of validity; defenses

A patent shall be presumed valid. Each claim of a patent (whether in independent or dependent form) shall be presumed valid independently of the validity of other claims; dependent claims shall be presumed valid even though dependent upon an invalid claim. The burden of establishing invalidity of a patent or any claim thereof shall rest on the party asserting it . . .".

IN THE
UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

Filed April 27, 1973
DENNIS R. MATHEWS, *Clerk*
U. S. Court of Appeals

SAFE FLIGHT INSTRUMENT CORPORATION, a New York corporation, *Plaintiff-Appellant,* v. MCDONNELL-DOUGLAS CORPORATION, a Maryland corporation, and SPERRY RAND CORPORATION, a Delaware corporation, *Defendants-Appellees.*	No. 71-1751

APPEAL FROM THE UNITED STATES DISTRICT COURT
FOR THE CENTRAL DISTRICT OF CALIFORNIA

Before: CHAMBERS, HAMLEY and WALLACE, Circuit Judges

HAMLEY, Circuit Judge:

Safe Flight Instrument Corporation (Safe Flight) brought this patent infringement action in the United States District Court for the Central District of California on December 31, 1968. In a six-count amended complaint Safe Flight charged defendants, McDonnell-Douglas Corporation (MDC) and Sperry Rand Corporation (Sperry), with infringement of Safe Flight's U. S. Letters Patent No. 3,043,540 ('540 patent), and with the improper use of trade secrets.

The '540 patent is entitled "Aircraft Instruments" and describes a closed-loop aircraft instrument system intended

to assist the pilot of a jet aircraft in take-off and other flight maneuvers such as landing approach and go-round. The subject matter of the '540 patent claims in suit is in commercial practice by Safe Flight in a Speed Command and Automatic Throttle System (SCAT), manufactured and sold by Safe Flight. The patent was issued to Safe Flight on July 10, 1962, as assignee of Leonard M. Greene.

The infringement claims are set forth in counts one, two and three of Safe Flight's amended complaint. In count one, Safe Flight alleged that MDC and Sperry have infringed, and will continue to infringe, the '540 patent in connection with the manufacture and sale of an Automatic Throttle/Speed Control System (AT/SC) for installation on MDC's model DC-10 aircraft. In count two, Safe Flight alleged that MDC and Sperry have infringed, and will continue to infringe, that patent in connection with the manufacture and sale of devices comparable to AT/SC for use on aircraft manufactured by MDC other than model DC-10. In count three, Safe Flight alleged that MDC (but not Sperry) has infringed, and will continue to infringe, the '540 patent by making, using and selling products embodying the patented invention on MDC model DC-9 aircraft and other aircraft.[1]

Defendants asserted various defenses, including that of patent invalidity. MDC moved for a partial summary judgment dismissing count three of the amended complaint. Safe Flight countered with cross-motions for partial summary judgment against MDC on the third count. Both motions were denied.

After a lengthy trial limited to the validity of the '540 patent and infringement of that patent by the Sperry AT/SC system, the district court entered a judgment declaring invalid all of the '540 patent claims in issue. In addition, the district court adjudged that Sperry's AT/SC

[1]The claims of the '540 patent which Safe Flight alleged were being infringed are claims 1-8, 17, 19, 20, 22 and 26.

system did not infringe the '540 patent even if that patent were valid. Safe Flight appeals.[2]

We will first consider issues pertaining specifically to counts one and two. The first such issue is whether MDC and Sperry are collaterally estopped from contesting the validity of the '540 patent.

In July, 1967, Safe Flight instituted a patent infringement suit, involving the '540 patent, and other patents, in the United States District Court for the Western District of Washington (Seattle case).[3] The defendants were United Control Corporation and its successor U. C. Liquidating Corporation, collectively referred to herein as UCC.

That suit was the outgrowth of UCC's action in contracting to manufacture its so-called Speed Command Computers of the angle of attack type, for installation in MDC's model DC-9 aircraft. In connection with the manufacture and sale of these devices, UCC agreed to indemnify MDC for any damages MDC might be required to pay for patent infringement. Safe Flight alleged, in the Seattle case, that the UCC devices infringed the '540 patent.

After a lengthy trial in the Seattle case, the district court in that case entered findings of fact and conclusions of law to the effect that the '540 patent is valid and claims 1 through 8, 17, 19, 20, 22 and 26 of that patent had been infringed by the defendants in that case. A judgment for Safe Flight, consistent with these determinations, was entered on December 11, 1968, and UCC and U. C. Liqui-

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[2]The judgment contains the express determination and direction which, under Rule 54(b), F. R. Civ. P., in the absence of abuse of discretion, confers jurisdiction upon this court to entertain an interlocutory appeal. *See Zangardi* v. *Tobriner*, 330 F. 2d 224 (D. C. Cir. 1964). Appellees do not assert that there has been an abuse of discretion in entering the Rule 54(b) recital, nor do we find such an abuse.

[3]That suit is entitled *Safe Flight Instrument Corporation* v. *United Control Corporation, et al.*, Civil Action No. 7268.

dating Corporation appealed. The appeals were docketed in this court as Nos. 23,746 and 23,867.

Safe Flight thereafter requested that the appeals in the Seattle case be remanded to the district court to enable that court to entertain Safe Flight's motion for a new trial and for other relief. On May 27, 1969, in an unreported order, this court granted the requested remand. On July 31, 1969, Safe Flight entered into an agreement with UCC settling all issues in the Seattle case. Under the terms of this agreement UCC paid Safe Flight the sum of $2,509,922.19, and, by consent, a final judgment was entered, one provision of which determined that the '540 patent is valid. The appeals in Nos. 23,746 and 23,867 were thereafter dismissed.

During the trial, Safe Flight did not contend that MDC and Sperry, in defending against counts one and two of the amended complaint, were collaterally estopped to challenge the validity of the '540 patent because of the adjudication of the validity of that patent in the Seattle case. At the outset of this case Safe Flight contended, at most, that the adjudication of validity in the Seattle case was entitled to "great weight" in the absence of convincing new evidence of invalidity. Accordingly, the pre-trial order of March 30, 1970, does not refer to any collateral estoppel issue.

As a matter of fact, during the pre-trial argument bearing on the cross-motion for summary judgment on count three, counsel for Safe Flight stated that had MDC not, by its motion for partial summary judgment, elected to accept benefits under the settlement agreement and judgment entered in the Seattle case, "they [MDC] could have remained solid and taken the position that nothing in Seattle affects them in any way . . . and they are entitled to their full day in court." Likewise, at the same hearing, counsel for Safe Flight conceded that "Sperry Rand has not had its day in court."

As recited in the judgment herein, the only issues tried were with regard to the validity of the '540 patent and whether that patent had been infringed by Sperry's AT/SC device. It is true that, in its cross-motion for partial summary judgment, Safe Flight contended that MDC was collaterally estopped by the judgment in the Seattle case. But that motion pertains only to count three of the amended complaint, to be dealt with below. The pre-trial order clearly provides for the separation of those matters pertaining peculiarly to counts three, four, five and six. Safe Flight did not raise collateral estoppel as to counts one and two during the proceedings in the district court. The court's findings of fact and conclusions of law made no reference to a collateral estoppel issue.

Even on this appeal, Safe Flight, in its opening brief, after referring to *Blonder-Tongue Laboratories, Inc.* v. *University of Illinois Foundation,* 402 U. S. 313 (1971), decided after the entry of judgment in this case, contended only that because of the judgment in the Seattle case, the '540 patent was entitled not only to the usual presumption of validity, "but also to the further strengthened presumption of validity after a considered decision" in the Seattle case.[4]

In its reply brief on this appeal, Safe Flight began to harden its position concering the asserted binding effect of the Seattle judgment insofar as counts one and two are concerned, until it finally asserted that MDC "and its privy, Sperry" should be bound by the outcome of the Seattle case. It was not until the oral agrument before us that Safe Flight began to talk about "collateral estoppel."

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[4]In its statement of issues presented for review, Safe Flight said nothing about collateral estoppel. Instead, it queried: "With respect to the same evidence, which of the Findings of Fact . . . [entered in the Seattle case or in the case now before us] . . . are clearly erroneous and which Conclusions of Law concerning the validity of the 540 patent are in error?"

In the context described above, we hold that the issue concerning the collateral estoppel of MDC and Sperry to assert their defense of patent invalidity as against counts one and two of the amended complaint was not raised and preserved by Safe Flight in the district court and therefore may not be presented on this appeal. *Grantham* v. *McGraw-Edison Co.*, 444 F. 2d 210, 216-217 (7th Cir. 1971); *Strouhal* v. *Allied Development Co.*, 220 F. 2d 541, 544 (10th Cir. 1955); *City of Erlanger* v. *Berkemeyer*, 207 F. 2d 832, 839 (6th Cir. 1953).

The findings of fact of the district court contain fifty paragraphs. Under five different headings Safe Flight argues that twenty-two of these findings, pertaining to the validity of the '540 patent are clearly erroneous.

At the outset of its argument concerning these findings of fact, Safe Flight observes that the questioned findings are "completely inconsistent and directly contrary" to the findings entered in the Seattle case, and postures the problem as one of determining which of the two sets of findings are clearly erroneous under Rule 52(a), F. R. Civ. P.

We decline to approach the problem in this way. It is true, as defendants concede, that prior adjudications as to validity of a patent "are entitled to respectful consideration and in doubtful cases they are strongly persuasive." *Ritchie* v. *Lewis-Browning Mfg. Co.*, 196 F. 2d 434, 436-437 (5th Cir. 1952). It was on this theory that the district court, in the case before us, admitted in evidence the judgment, findings of fact and conclusions of law entered in the Seattle case. We have no reason to believe that the district court in our action failed to accord these records of the Seattle case the weight to which they are entitled.[5]

[5]At the outset of the present trial, the district court announced that if it had a strong view concerning the validity of the patent, it would not be influenced by the finding as to validity in the Seattle case, but that if the court found the issue to be in doubt, the Seattle findings "would constitute make-weight."

But the respect which should be accorded prior adjudications as to validity of a patent does not, absent estoppel running against the parties to the prior litigation, supplant the primary duty of a court to dispose of cases according to the law and the facts of the particular case before it. *See Ritchie, supra,* at 437.

Our function on appeal is consonant with this view. Moreover, it would not be practicable for us to enter into an appraisal of the relative soundness of the two sets of findings. The record of the Seattle case is not before us. The parties have argued pro and con as to the differences between the evidence in the two records, but we have no basis for evaluating their differing appraisals. We have accordingly determined the soundness of the findings of fact in the instant case, as measured by Rule 52(a), by a consideration of the evidence received in this trial.

We do not propose to deal individually with each of the twenty-two questioned findings of fact and the evidence relevant to each. Instead, we will consider them as a whole. Taken together, and with some of the unchallenged findings, these questioned findings represent the trial court's determination that, on this record, the device described in the patent claims at issue constitutes a combination of old elements, which combination would have been obvious at the time the invention was made to a person having ordinary skill in the relevant art. Findings having this import, if sustainable on the record, warrant a conclusion that the patent is invalid under U. S. C. § 103.

Safe Flight characterizes the device described in the '540 patent as a "director" instrument, as distinguished from a "displacement" instrument. Displacement instruments provide a pilot with information as to the flight situation then existing or which has just previously existed. Utilizing this information the pilot is expected to determine what corrective action, if any, should be taken, and proceed

to take such action. Director instruments, on the other hand, convey no specific information to the pilot concerning the then existing flight situation. Instead, they direct him as to which way and how much he should move his controls to perform some predetermined task.

According to Safe Flight, the particular director instrument described in the '540 patent was primarily designed to meet the jet take-off problem encountered because of some aerodynamic peculiarities of jet aircraft. It had been determined that, in order to meet this problem a new criterion should be selected, namely, that the speed at the lift-off had to be a certain percentage above a speed called the minimum "unstick" speed.[6]

Speed is controlled by rotation of the pitch attitude (raising or lowering the wheel nose of the aircraft). If the pilot knows the pitch attitude necessary to attain the proper lift-off speed and the existing pitch attitude, he can make adjustments to achieve the necessary pitch attitude. An instrument displaying pitch attitude on an artificial horizon was available, but it was subject to gyro precision errors.

Pitch attitude equals the angle of attack (the incidence angle with which the wings attack the air mass) plus the flight path angle. Therefore, another way of attaining the pitch attitude necessary to reach the appropriate lift-off speed is to determine the current angle of attack and adjust the flight path angle accordingly. Safe Flight's own prior U. S. Letters Patent No. 2,945,375 ('375 patent) is a displacement type instrument which provides a lift signel. Lift is a function of forward speed and the angle of attack, thus the '375 device provides a measure of the angle of attack. However, reliance on the '375 measuring device in making adjustments produced a phugoid or "roller coaster" type flight path. Errors in acceleration measurement (and,

[6]The minimum "unstick" speed is the lowest speed at which one can demonstrate a jet take-off without displaying hazardous characteristics.

flight path. Errors in acceleration measurement (and, therefore, the '375 lift signal and the angle of attack) were caused by the pitch of the aircraft.

As Safe Flight concedes, the '540 patent is a modification of the '375 device accomplished by biasing the '375 lift signal with a ground acceleration signal. The princial parts added to the '375 device are a gyroscope and a pendulous accelerometer. The gyroscope removes the effects of aircraft pitch from the pendulous accelerometer, thus removing the error in acceleration measurement noted above. The forward acceleration signal was added to the lift signal from the '375's lift transducer and the combined signal was displayed on a Fast/Slow meter.

The trial court found that a person of ordinary skill in the part prior to 1958 would have no difficulty in realizing that the determination of the forward acceleration would necessitate the removel of the effect of pitch from an accelerometer. The court also found that, to a person of ordinary skill in the art, having the '375 patent before him, this would immediately suggest the use of a gyroscope to remove the pitch from the accelerometer therein described. The prior art U. S. Letters Patent No. 2,942,864 to Sikora taught that a gyroscope could be combined with the pendulous accelerometer to remove the effect of pitch and thus get a signal representative of actual acceleration notwithstanding the pitch of the aircraft.

While there is room for debate as to the evidentiary support for these and other questioned findings, we conclude that they are not clearly erroneous. The trial court based its findings primarily upon the device described in claim one of the patent, on the theory that it was probably the broadest claim. We find nothing in the record which convinces us that this procedure was improper.[7]

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[7]We recognized that the foregoing discussion of the findings and evidence is summary in form and omits much that the respective parties rely upon. Since we are affirming, however, it seems to us

Safe Flight takes issue with several of the trial court's conclusions of law pertaining to counts one and two. We do not find it necessary to place our imprimatur upon all of the questioned conclusions. Perhaps some go too far and perhaps certain of the decisions cited are not in point. What is important, however, is that the district court rigidly adhered to the rules and criteria of the Supreme Court in determining that the questioned patent claims are invalid under 35 U. S. C. § 103.[8]

All of the factual inquiries required under the *Graham* decision, and in *Reeves Instrument Corporation* v. *Beckman Instruments, Inc.*, 444 F. 2d 263 (9th Cir. 1971), in order to resolve the obviousness—non-obviousness dichotomy, were made. Consistent with *Reeves,* the trail court determination that the '540 patent is obvious took into account the subject matter as a whole and did not rest alone on a consideration of the individual elements of the claimed combination and their individual novelty or lack of novelty.

The foregoing discussion renders it unnecessary for us to consider the trail court's determination that some of the questioned claims of the '540 patent are also invalid under 35 U. S. C. § 102(a), and that court's determination that, in any event, the '540 patent was not infringed by the Sperry AT/SC system.

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a more extensive discussion would have little utility. Our conclusion, stated above, is based upon our understanding of the record considered as a whole. In reaching that conclusion we have given due recognition to the opportunity the trial court had, over a period of weeks, to evaluate live testimony, and to query the witnesses on doubtful points.

It should also be added that, in sustaining the questioned findings of fact in this case, we are not holding that the contrary findings in the Seattle case are necessarily clearly erroneous. Each set of findings must be judged by the record in the case in which the findings were entered. As previously noted, the record in the Seattle case is not before us.

[8] *See Graham* v. *John Deere Co.*, 383 U. S. 1 (1966); *United States* v. *Adams,* 383 U. S. 39 (1966); *Anderson's-Black Rock, Inc.* v. *Pavement Salvage Co., Inc.*, 396 U. S. 57 (1969).

This brings us to the issues on appeal peculiar to count three of the amended complaint. Actually there is only one such issue.

As noted above, the trail was had only with regard to the validity of the '540 patent (at issue in counts one, two, and three), and infringement of that patent by the Sperry AT/SC system (at issue only in counts one and two). These issues were decided adversely to Safe Flight.

Thus, apart from the question as to the validity of the '540 patent, the trial involved no issue concerning count three of the amended complaint, and the judgment entered at the close of the trail did not dispose of count three (or counts four, five and six) of the amended complaint. But Safe Flight nevertheless argues that the trail court erred in denying Safe Flight's cross-motion for partial summary judgment on count three.

Discussion of this contention requires us to consider the context in which Safe Flight made this cross-motion. MDC first moved for a partial summary judgment dismissing the third count of the amended complaint. In support of this motion, MDC argued that, in view of an indemnity agreement entered into between UCC and MDC, concerning the manufacture of Speed Command Computers by UCC for installation in MDC aircraft, of which agreement Safe Flight had notice, and in view of the terms of the settlement agreement between Safe Flight and UCC in the Seattle case, and by reason of the fact that count three pertains to the installation of UCC's Speed Command Computers in MDC aircraft, MDC has been released and discharged by Safe Flight from any and all claims for such infringement.

Safe Flight countered with its cross-motion for a partial summary judgment in Safe Flight's favor on count three. As we construe this motion, Safe Flight sought a ruling that MDC is estopped to question the determination in the Seattle case on patent validity and infringement. The estab-

lishment of this estoppel would lay the groundwork for Safe Flight's prayer for damages and injunctive relief on its count three.

In support of this motion Safe Flight argued that, by moving for a partial summary judgment in reliance upon the settlement agreement and judgment in the Seattle case, MDC had bound itself to accept the adjudication, in the Seattle case, that the '540 patent is valid and infringed. In addition, Safe Flight argued that, by reason of the privity between MDC and UCC, MDC was estopped by the Seattle judgment, insofar as count three of the amended complaint is concerned, from contesting the validity and infringement determination made in that case.

Ordinarily the denial of a motion for summary judgment is not appealable, even where there has been an express direction and determination of the kind called for by Rule 54(b), F. R. Civ. P. This is because an order denying a motion for a summary judgment does not finally dispose of any claim. *See* 6 MOORE'S FEDERAL PRACTICE 2790 (2d Ed. 1972). But such an order would be appealable if the effect of the order was to deny a petition for a preliminary injunction. *See* 28 U. S. C. § 1292(a). Since Safe Flight did seek injunctive relief in its motion for partial summary judgment, we hold that the order denying the motion is appealable.

The factual premises of Safe Flight's motion, and of MDC's opposition thereto, are highly complex. The district court did not deny the motion because it was convinced that the motion was without merit, but because the issue presented was so complicated the court did not wish to dispose of it on a motion for partial summary judgment. In effect, the denial was without prejudice. Under the circumstances we believe this was a judicious way to deal with the matter. Safe Flight did not regard the count three re-

quest for injunctive relief as urgent. This is indicated by the fact that Safe Flight did not seek an immediate appeal from the order of denial, pursuant to 28 U. S. C. § 1292(a), but was content to raise the question on the main appeal after the trial.

We conclude that the district court did not err in denying Safe Flight's motion for partial summary judgment, and that count three remains to be disposed of in further district court proceedings.

Safe Flight complains of asserted irregularities in trial procedure, including piecemeal progress of the trail. We have reviewed the circumstances complained of and find nothing indicating an abuse of discretion by the trial court or substantial prejudice to Safe Flight.

The judgment and order under review are affirmed and the cause is remanded to the district court for further proceedings on counts three, four, five and six of the amended complaint.

IN THE

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

[SAME TITLE]

Order

Before: CHAMBERS, HAMLEY and WALLACE, Circuit Judges

The panel as constituted in the above case has voted to deny the petition for a panel rehearing.

The full court has been advised of the suggestion for an in banc rehearing, and no judge of the court has requested a vote on the suggestion for rehearing in banc. Fed. R. App. P. 35(b).

The petition for rehearing is denied and the suggestion for a rehearing in banc is rejected.

Dated: September 13, 1973

FREDERICK G. HAMLEY

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United States Circuit Judges

UNITED STATES COURT OF APPEALS

FOR THE NINTH CIRCUIT

SAFE FLIGHT INSTRUMENT CORPORATION, Plaintiff-Appellant, vs. McDONNELL DOUGLAS CORP., & SPERRY RAND CORPORATION, Defendant-Appellees.	No. 71-1751

ORDER STAYING ISSUANCE OF MANDATE

Upon application of ROBERT YALE LIBOTT, ESQ. counsel for the Plaintiff-Appellant, and good cause appearing, IT IS ORDERED that the issuance, under Rule 41(a) of the Federal Rules of Appellate Procedure, of the certified copy of the judgment of this Court in the above cause be and hereby is stayed pending the filing, consideration and disposition by the Supreme Court of the United States of a petition for writ of certiorari to be made by the Plaintiff-Appellant herein, provided such petition is filed in the Clerk's Office of the Supreme Court of the United States on or before OCTOBER 20, 1973.

In the event the petition for writ of certiorari is granted, then this stay is to continue pending the final disposition of the case by the Supreme Court of the United States.

FREDERICK G. HAMLEY
United States Circuit Judge.

Explanation of changes made by Judge Gray in pen to Defendants' Second Amended Proposed Findings of Fact and Conclusions of Law, (Page References are to the original) infra A18-A37.

PAGE	LINE	INSERTION
4	27	Irrespective of how
4	30	as a result of the addition
5	2	structural
5	26	and
5	28	of having
6	4	forward
11	3	here
11	8	that
11	22	In the Sperry AT/SC system
12	18	what are therein described as
12	22	a stagnation point vane or an accelerometer with the pitch removed,
12	29	However, it also was aware of the '540 patent.
13	3	substantially
14	16	that
17	30	(See addendum at the foot of page 20 hereof)
19	27	, subject to addendum to paragraph 17 hereof.

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CENTRAL DISTRICT OF CALIFORNIA
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UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SAFE FLIGHT INSTRUMENT CORPORATION, a New York Corporation, Plaintiff, vs. McDONNELL-DOUGLAS CORPORATION, a Maryland Corporation, and SPERRY RAND CORPORATION, a Delaware Corporation, Defendants.	CIVIL ACTION NO. 68-2129-WPG ~~SECOND AMENDED PROPOSED~~ FINDINGS OF FACT AND CONCLUSIONS OF LAW

The above-entitled cause having come on regularly for trial and the Court having duly considered the evidence and the post trial briefs filed by the parties, and final arguments of the parties and being fully advised in the premises, on the whole record now makes the following:

Findings of Fact

1. This action arises under the patent laws of the United States; Act of July 19, 1952, Ch. 950, 60 Stat. 792 et. seq.; Title 35, United States Code, §1, et. seq.; more particularly 35 U.S.C. §§ 271, 381.

2. This is a civil action for infringement of United States Letters Patent 3,043,540, (hereinafter designated the '540 patent) which was issued to Leonard M. Greene, and assigned to plaintiff, Safe Flight Instrument Corporation, (hereinafter Safe Flight) on July 10, 1962, from an application filed November 17, 1959 as a continuation-in-part of a co-pending parent application filed October 14, 1959.

3. Plaintiff, Safe Flight, is a corporation organized and existing under the laws of the State of New York, and has its principal place of business at White Plains, New York.

4. Defendant Sperry Rand Corporation (hereinafter Sperry) is a corporation established and existing under the laws of the State of Delaware, and has a regular and established place of business in the City of El Segundo, Staty of California, within the Central District of California, and a place of business and manufacturing facility designated as the Flight Systems Division of Sperry Rand at Phoenix, Arizona.

5. Defendant McDonnell-Douglas Corporation (hereinafter MDC or Douglas) is a corporation organized and existing under the law of the State of Maryland, and has a regular and established place of business in the City of Long Beach, County of Los Angeles, State of California, all within the Central District of California.

6. Defendant MDC is in the business of developing, manufacturing and selling military and commercial aircraft, including the model DC-10 airplane, equipped with airplane instruments.

7. Plaintiff and defendant Sperry are in the business of developing, manufacturing and selling airplane instruments.

8. Jurisdiction and venue of this Court was determined. Defendants both have a regular and established place of business within this district and the defendants' activities charged by plaintiff to be infringements of the '540 patent were

carried out in this district and elsewhere.

9. The device of the '540 patent is an aircraft control system for providing an indication (e.g., electrical signal or visual signal) which may be employed during take-off, landing approach, go around and other flight modes.

10. The claims of U. S. Patent 3,043,540 at issue as to invalidity and infringement are, claims 1-8, 17, 19, 20, 22 and 26, inclusive, and claims 1, 3, 20 and 22 are designated by the plaintiff as representative of these claims. Claims 1, 3 20 and 22 designated as representative by plaintiff do not in each instance recite all the elements (a) through (d) of Finding of Fact No. 11. Those elements recited in the claims are referred to in general terms of "means" such as indicated in parenthesis below. The plaintiff has not shown or alleged any substantial distinction between the representative claims and the other claims of the '540 patent.

11. The device of the '540 patent is a combination of old and well known elements, comprising:

(a) a stagnation point vane or angle-of-attack vane (means responsive to lift);

(b) a pendulous accelerometer or longitudinal accelerometer (means responsive to forward acceleration) and a gyroscope connected to remove pitch from the accelerometer (essentially independent of pitch);

(c) a mixer circuit (combining means) for combining signals from (a) and (b) above to provide a director signal; and,

(d) a visual display or autopilot (a utilization mechanism).

Each of these elements was known prior to the conception, or the effective filing date, of the application leading to the '540

patent. Each of the elements in the patent in suit is employed in substantially the same way, to perform the same functions, in substantially the same manner, in the prior art.

12. The prior art U. S. Patent 2,945,375 (filed on February 5, 1954 and hereinafter referred to as the "'375 patent") teaches the combining of:

(a) a stagnation point vane (means responsive to lift);

(b) pendulous accelerometer or longitudinal accelerometer (means responsive to forward acceleration);

(c) a mixer circuit (combining means) for combining the signals from (a) and (b) above to provide a combined signal; and,

(d) a visual display or autopilot (the utilization mechanism) for employing the combined signal.

Devices including elements (a) - (d) as taught by the '375 patent have been taught to be employed during take-off and landing and have been taught to be employed on prop and jet airplanes.

13. The '375 patent teaches that a signal from a stagnation point vane and a forward accelerometer (e.g., longitudinal accelerometer, pendulous accelerometer) may be combined to obtain a signal of the same general type as the '540 patent, which is alternatively supplied to an autopilot or a fast-slow needle.

14. The designation of the signal utilized in the '540 patent as a director signal defines no difference in structure over the '375 patent since the only difference in structure is the addition of a gyroscope. ~~However,~~ the signals are designated in '540 and '375, the signal of '540 to the utilization mechanism differs from that of '375 only by the absence in the '540 signal of pitch error (θ) from the acceleration signal, ~~by reason~~ of the gyro. The fast-slow needle in the '375 patent is the same as that in the '540 patent, and it is only the devices connected to the fast'slow needle that differ in

the way discussed in paragraph 15 below.

15. The only structural difference between the '375 device and the '540 device is the addition of the gyroscope to the accelerometer employed in the '375 device. This difference is reflected in the representative claims (e.g., claims 1, 3, 20 and 22) by reciting "essentially independent of the pitch attitude of the airplane" in varying degrees of specificity. The purpose of adding the gyroscope to the '540 patent was to remove pitch [designated by the Greek symbol theta (θ)] from the accelerometer and thus obtain a signal representative of forward acceleration notwithstanding the pitch of the aircraft. Thus, the '540 device equals the device of the '375 patent minus theta.

16. The prior art U. S. Patent 2,942,864 to Sikora (filed on July 29, 1955 and hereinafter referred to as the "Sikora patent") taught that a gryoscope could be combined with the pendulous accelerometer to remove the effect of pitch and thus get a signal representative of the actual forward acceleration notwithstanding the pitch of the aircraft. Thus, the '540 device equals the '375 patent plus the teachings of Sikora.

17. The modification of the accelerometer in the '375 patent in accordance with the teaching of the Sikora patent to remove pitch resulted in no unexpected or surprising result.

18. The need for combining a forward acceleration signal and a signal related to lift was suggested to Mr. Greene by Mr. Shevell and Miss Jones, employees of Douglas aircraft. The essence of the conversations and correspondence between Mr. Greene and Mr. Shevell and Miss Jones was the articulation of the value to the pilot ~~to have~~ immediately available, at all times after V_R (rotation velocity), a combination of the assessment of coefficient of lift and acceleration along the flight path, so that the pilot might climb as sharply toward the maximum coefficient of lift (C_{Lmax}) as continue acceleration would permit. Inasmuch as such a take-off procedure for the first passenger jets would involve a substantial amount of

pitch to approach the C_{Lmax} (as compared with the prior passenger propeller aircraft), a person skilled in the art prior to 1958 would have no difficulty in realizing that the determination of the forward acceleration would necessitate the removal of the effect of pitch from an accelerometer. To a person of ordinary skill in the art having the '375 patent before him, this would immediately suggest the use of a gyroscope to remove pitch from the accelerometer therein described. The Sikora patent teaches precisely this use of the gyroscope and teaches the manner in which the gyroscope may be employed in connection with a pendulous accelerometer (which is one of the accelerometers employed in the '375 patent) to remove pitch in precisely the manner set forth in the '540 patent.

19. In 1958, commercial jets were in their infancy; the DC-8 was not yet operational, and Douglas was in the process of working out the techniques of taking off and landing these heavy and fast moving airplanes. The importance of combining coefficient of lift and forward acceleration became apparent, at least to Mr. Shevell and Miss Jones, in the course of development of such pre-operational techniques, and, Mr. Greene adapted his prior knowledge of the prior art '375 patent to produce the '540 solution virtually as soon as he was exposed to the problem explained in terms of coefficient of lift and acceleration. There was no long felt need to which the '540 device contributed a solution.

20. Prior to September 24, 1958, Mr. Greene was working on an aircraft instrument utilizing a G-rate device to be employed in combination with a stagnation point vane, wherein the signals from these devices were combined and displayed. On September 17, 1958, Mr. Greene wrote his sales representative on the West Coast regarding this system and the selling effort that should be pursued. On September 24th or 25th, Greene traveled to Los Angeles and was accompanied to Douglas by his sales representative for a meeting with personnel at Douglas, a potential

customer. At Douglas, Greene met with Mr. Shevell and Miss Jones at which time the importance and relationship of the two parameters coefficient of lift and acceleration during take-off, were explained to Greene. On or about October 1st, Greene wrote to his patent attorney regarding the combining of an acceleration signal and a lift signal. By October 11, 1958, Greene had reduced to practice a device combining acceleration (i.e., ground plane acceleration) and a lift signal measured by a stagnation point vane. The conception and reduction to practice dates are October 1 and October 11, 1958, respectively. Thus, the critical date as to 35 U.S.C. 102(a) is prior to October 1, 1958.

21. The earliest filing date which the plaintiff is entitled to as to the subject matter of Figures 1-6 and Figure 8 of the '540 patent is October 14, 1959, and the earliest filing date which the plaintiff is entitled to as to Figure 7 of the '540 patent is November 17, 1959. The critical date as to 35 U.S.C. 102(b) for the subject matter of Figures 1-6 and Figure 8 and Figure 7 is prior to October 14, 1958 and November 17, 1958, respectively.

22. The Lear development, as evidenced by the ASTIA Document No. AD-112497, discloses and teaches to a person of ordinary skill in the art prior to 1958 an angle-of-attack system comprising an angle-of-attack error device (defined in the '540 patent as means responsive to lift and to the departure of lift from a predetermined value) which produces an angle-of-attack error signal, which signal is combined by a pitch mixer circuit (combining means) with a rate of change of air speed (forward acceleration) signal provided by an air speed sensor and rate circuit substantially identical to the forward acceleration means that is shown in Figure 7 of the '540 patent. The combined signal from the pitch mixer is a signal of the same type referred to as a director signal in the '540 patent and is employed to drive an automatic pilot which is one of the utilization

mechanisms described and claimed in the '540 patent.

23. The Lear development, as evidenced by the systems built pursuant to contracts with the government (e.g., C-45, T-28, F-100 and F-101) prior to the critical dates set out in Findings of Fact Nos. 20 and 21, openly employed the combination comprising an angle-of-attack error device (means responsive to lift and to the departure of lift from a predetermined optimum value) which produces an angle-of-attack error signal which signal is combined by a pitch mixer circuit (combining means) with a signal from a rate of change of air speed (forward acceleration) device, which in one version was substantially identical to the forward acceleration means that is shown in Figure 7 of the '540 patent. The combined signal from the pitch mixer is a signal of the same type referred to as a director signal in the '540 patent and is employed to drive an autopilot which is one of the utilization mechanisms described in the '540 patent.

24. The automatic pilot portion of the Lear system is shown to the right of the pitch mixer in Figure 2 of the ASTIA Document (Def. Ex. CJ) and is a utilization mechanism. The particular utilization mechanism employed in the '540 patent was not considered by the plaintiff to be an essential part of the combination of the alleged invention. The automatic pilot mentioned in the '540 patent as a utilization mechanism is not described in detail in the specification of the '540 patent and a particular autopilot is not important in the '540 patent.

25. Neither director displays nor autopilots were new at the time of the conception of the '540 patent or the effective filing dates of the '540 patent, and it was recognized prior to such time that the signals supplied to an automatic pilot could be supplied by a display as a command to a human pilot. The fact that signals produced by a device are submitted as commands to a human pilot rather than to an automatic pilot during a particular mode of flight is not novel and produces no unusual

or surprising results but rather would have been a routine alteration to one of ordinary skill in the art prior to October 1958.

26. Prior to October 1958, ground plane accelerometers (e.g., Sikora patent) and air speed rate devices (e.g., Lear development) were well known devices for measuring acceleration and obtaining signals proportional thereto. The substitution of one of these devices for the other of the devices, prior to 1958, by a person of ordinary skill in the art would require only routine and ordinary engineering.

27. Prior to October 1958, angle-of-attack vanes and stagnation point vanes were well known devices for measuring physical events relatable in some way to angle-of-attack (one of the parameters in determining coefficient of lift). The substitution of one of these devices for the other of the devices, prior to 1958, by a person of ordinary skill in the art would require only routine and ordinary engineering.

28. The Lear system as described in Findings of Fact Nos. 22 and 23 was employed during approach and go-around, and if operated automatically in such modes of operation it would operate in substantially the same way as the '540 device would enable manual operation by the human pilot observing a display in such modes of operation.

29. The Lear system was described in a printed publication in this country more than one year prior to the date of the application for the '540 patent and was described and shown in such publication so that a person of ordinary skill in the art prior to 1958 would understand the system as set forth in Findings of Fact No. 22 and would be able by routine engineering, but without invention, to reproduce such a system.

30. The angle-of-attack system described in Finding of Fact No. 23 built by Lear for the C-45, T-28, F-100 and F-101

aircraft, worked as intended, was an operable system, was reduced to practice and was not suppressed, concealed, experimental or an abandoned experiment. The angle-of-attack system concept and the generalized system arrangement as described in Finding of Fact No. 23 did not substantially change in the various aircraft notwithstanding certain other specific details were altered and refined.

31. The angle-of-attack system described in Findings of Fact Nos. 22 and 23 was reduced to practice and delivered to the government pursuant to a contract prior to the conception of the '540 device and more than one year prior to the filing of the patent application which resulted in the '540 patent. There were no restrictions or confidentiality imposed by Lear or the government with respect to the angle-of-attack system built and delivered under contract.

32. The Sikora patent, the '375 patent, the Lear system and the '540 patent are all part of the same art.

33. The previously stated conclusions of the Court with respect to validity of the patent in suit obviate the necessity for the Court to rule on the other bases presented for invalidity, namely, those dealing with the prior art of McRuer, Joline, Jude, Sperry Zero-Reader patent and Fischel and the Muncie Gear Doctrine.

34. Each of the claims of the '540 patent alleged by plaintiff to be infringed defines the combination of (1) means responsive to forward acceleration, said means being essentially independent of pitch attitude and providing a variable output; (2) means responsive to lift also providing a variable output; and, (3) means combining these two outputs to produce a director signal which may be employed in a utilization mechanism such as a meter or autopilot. The above elements are defined with

varying degrees of specificity with plaintiff asserting Claim 1 as (probably) being the broadest claim.

35. The "Sperry AT/SC System", as the term is employed, refers to the systems being supplied to Douglas for the DC-10 and to American Airlines, as exemplified by Plaintiff's Exhibits 13, 14 and 16.

36. The Sperry AT/SC system is an automatic throttle/speed control system for aircraft ~~which~~ gives pilot guidance for speed control during all modes of flight from take-off to touchdown. The Sperry AT/SC system is the electrical sub-system portion of a generic closed loop control system of the type well known to the art. The Sperry AT/SC system utilizes control equations to control the speed of the aircraft to a preselected speed in flight modes other than takeoff, and to control to a computed reference coefficient of lift of the airplane which determines the proper speed of the aircraft during takeoff. In order to provide such control during takeoff, the control equation of the Sperry AT/SC system includes the difference between the appropriate reference coefficient of lift of the airplane and existing coefficient of lift of the airplane and flight path acceleration.

37. The reference and existing coefficient of lift parameters and the flight path acceleration parameter ~~of the Sperry system~~ are not measured but are inferentially computed from many sensed inputs by sophisticated computational techniques.

38. "Means responsive to lift" in the claims of the '540 patent is described in the '540 patent as an angle-of-attack vane or stagnation point vane which measures or senses angle-of-attack or stagnation point position.

39. The Sperry AT/SC system does not measure angle-of-attack or any function of lift; rather it computes both the proper reference and existing coefficients of lift of the airplane

40. The Sperry AT/SC system includes no device or mechanism responsive to lift as described and claimed in the '540 patent nor any equivalent thereof.

41. The Sperry AT/SC system includes no device or mechanism responsive to forward acceleration essentially independent of pitch attitude as described and claimed in the '540 patent nor any equivalent thereof.

42. Furthermore, the '540 patent, its file history and evidence adduced at trial, limit means responsive to forward acceleration essentially independent of pitch attitude to a measurement of ground plane (horizontal) acceleration.

43. The control equation of the Sperry AT/SC system includes a computation of flight path acceleration which is quite different from ground plane acceleration and is in no sense independent of pitch attitude of the aircraft as this term is employed in the '540 patent.

44. The director indication of the '540 patent stems from the combination of two signals that originate from a stagnation point vane (or angle-of-attack vane) and an accelerometer with the pitch removed.

45. The Sperry AT/SC system ~~does not adopt the disclosure of the '540 patent~~, does not use ~~such disclosure for the same purpose as the '540 patent~~ and does not operate in the same manner as the apparatus described and claimed in the '540 patent.

46. The construction of the Sperry AT/SC system, its mode of operation and computational techniques were conceived by Sperry by building logically upon its own expertise and knowledge of the prior art.

47. To the extent that the '540 system and the Sperry system accomplish the same gross result of providing display signals to the pilot for aircraft take-off, such signals are not

exactly the same in the two systems. Even assuming that the resul achieved by the two systems were precisely the same, the Sperry AT/SC system and the system of the '540 patent are ~~completely~~ different in the manner in which such results are accomplished.

48. The present suit was instituted by plaintiff days after it became aware that defendant Sperry was the successful bidder for the DC-10 contract for which plaintiff was also competi This was prior to defendants Sperry and Douglas entering into such DC-10 contract and prior to the defendant Sperry building the device (AT/SC system) which became the subject of this litigation or any other accused device. The plaintiff based its complaint on the generalized specification issued by Douglas which did not require any particular hardware. The plaintiff did not know whether the defendant would infringe, but, notwithstanding this the complaint was not filed on information and belief. Large part of plaintiff's Trial Memorandum were based on correspondence and documents describing ~~the~~ systems never built by defendant Sperry. The plaintiff attempted to prove infringement by referring to certain electrical elements within the AT/SC system and resorting to a strained interpretation of the claims without reference to th body of the patent or the file wrapper history. There was no atte by the plaintiff to show how the numerous sensors and circuits for computing C_L and C_{Lref} in the AT/SC system were equivalent to the vane and potentiometer of the '540 patent (other than by attempti to show overall similar results of the total systems). The same true with regard to the acceleration means of the '540 patent. Th was not at the time of the complaint and there is not now a reaso basis for the allegation of infringement.

49. The plaintiff has made press releases and contacted defendants customers or potential customers regarding patent infringement by selling or using the systems that are the subject of the instant lawsuit.

50. The Conclusions of Law, set forth below, insofar as they may be considered Findings of Fact, are so found by this Court to be true in all respects.

CONCLUSIONS OF LAW

1. This Court has jurisdiction of the parties and of the causes of action set out in the Complaint and Counterclaim.

2. The subject matter defined by the claims of the '540 patent in issue, as a whole, would have been obvious to a person of ordinary skill in the art prior to the time of the alleged invention in view of the teachings of the prior art patents, U. S. Patent 2,945,375 ("'375 patent"), and U. S. Patent 2,942,864 ("Sikora patent") and consequently the claims of the '540 patent in issue are invalid under 35 USC 103.

3. To the extent that the validity of the '540 patent depends on the disclosure of a combination that "produces in some way or manner a surprising or unusual result ~~which~~ would not have been expected by a person having ordinary skill in the art", the patent in suit does not meet this test. The results obtained by modifying or combining elements as was done in the '540 patent would be obvious to one of ordinary skills in the relevant art, and consequently the claims in issue of the '540 patent are invalid under 35 USC 103. ~~E.g.~~ Cf, Andersons Black-Rock Inc. v. Pavement Salvage Co., Inc., 396 U.S. 57 (1969); Santa Anita Mfg. Corp. v. Lugash, 369 F.2d 964 (9th Cir. 1967); San Marino Electronic Corp. v. George J. Meyer Co., 155 U.S.P.Q. 617 (C.D. Calif. 1967); aff'd 422 F.2d 1285 (9th Cir. 1970); Canadian Ingersoll-Rand Company v. Peterson Products of San Mateo, 223 F.Supp. 803, 808, 139 U.S.P.Q. 61, 65 (N.D. Calif. 1963).

4. The Lear Engineering Report ER-1190, which was distributed as ASTIA Document No. AD-112497, was a "printed publication" within the meaning of 35 USC 102(a). Hamilton Laboratories v. Massengill, 111 F.2d 584 (6th Cir. 1940),

cert. denied, 311 U.S. 688 (1940); Indiana General Corp. v. Lockheed Aircraft Corp., 249 F.Supp. 809 (S.C. Calif. 1966), summary judgment reversed on other grounds, 408 F.2d 294 (9th Cir. 1968).

5. The angle-of-attack system of the Lear device was "known or used" prior to the date of the alleged invention of the '540 patent within the meaning of 35 USC 102(a). Stearns v. Tinker & Rasor, 220 F.2d 49 (9th Cir. 1955), cert. denied 350 U.S. 830 (1955).

6. The angle-of-attack system of the Lear device was in "public use or on sale" in this country more than one year prior to the effective filing dates of the application resulting in the '540 patent (i.e., before the critical dates) within the meaning of 35 USC 102(b). Piet v. United States, 176 F.Supp. 576 (S.D. Calif. 1959); aff'd per curiam 283 F.2d 693 (9th Cir. 1960); Monolith Portland Midwest Co. v. Kaiser Alum. & Chem. Corp., 267 F.Supp. 726, 783 (C.D. Calif. 1967).

7. The angle-of-attack system of the Lear device was a prior invention (i.e., reduced to practice prior to the critical date) which was not abandoned, suppressed or concealed within the meaning of 35 USC 102(g). Corona Cord Tire Co. v. Dovan Chemical Corp., 276 U.S. 385, 48 S.Ct. 380 (1928).

8. The angle-of-attack system of the Lear device was not experimental at a time prior to the critical dates. Smith v. Hall, 301 U.S. 216 (1937); Tool Research and Engineering Corp. v. Hancor Corp., 240 F.Supp. 296 (S.D. Calif. 1964), affirmed 367 F.2d 449 (9th Cir. 1966), cert. denied, 387 U.S. 919, rehearing denied, 389 U.S. 893; Super Mold Corporation v. Clapp's Equipment Division, Inc., 397 F.2d 932 (9th Cir. 1968).

9. The Lear angle-of-attack system as described in ASTIA Document No. AD-112497 anticipates and reads on claims 1-6, 19 and 20 of the '540 patent within the meaning of 35 USC

102(a) and consequently these claims are invalid thereunder.

10. The Lear angle-of-attack system which is a "prior invention", "known or used" and "in public use or on sale" anticipates and reads on claims 1-6, 19 and 20 of the '540 patent within the meaning of 35 USC 102(g), 35 USC 102(a) and 35 USC 102(b), respectively, and consequently these claims are invalid thereunder.

11. The claims in issue of the '540 patent, each considered as a whole, would have been obvious to a person of ordinary skill in the art prior to the time of the invention in view of the prior art Lear development as referred to in Conclusions of Law Nos. 4 through 8 above, and consequently these claims are invalid under 35 USC 103.

12. The evidence establishes and the Court concludes that each element of the patent in suit is shown in prior art references. No single element of the patent in suit constitutes invention. Scrutiny of combination claims should be even more detailed when, as with the patent in suit, the old elements have been previously employed in a similar relationship for a similar purpose, or when the elements perform the same function in combination as out of it.

13. Even if the claims here in issue disclosed the combination of all of the elements of the '540 patent, each of such claims would be invalid for lack of invention, that is, obviousness, over the prior art here concerned, namely the '375 patent, the Sikora patent or the Lear development. Furthermore, "A patent for a combination which only unites old elements with no change in their respective functions, * * * obviously withdraws what already is known into the field of its monopoly and diminishes the resources available to skillful men." Farr Co. v. American Air Filter Co., 318 F.2d 500, 503, 137 U.S.P.Q. 627, 629 (9th Cir. 1963).

14. The claims of the '540 provide the standard against which infringement is to be determined. Plaintiff has the burden of proof to establish infringement of the '540 patent and has not sustained that burden. Graver Tank & Mfg. Co., Inc. v. Linde Air Products, 339 U.S. 605 (1950), 70 S.Ct. 854, 94 L.Ed. 1097; Nelson v. Batson, 322 F.2d 132 (9th Cir. 1963); Del Francia v. Stanthony Corporation, 278 F.2d 745 (9th Cir. 1960); San Marino Electronic Corp. v. George J. Meyer Co., supra.

15. Where, as in the present case, the elements of the patent are found in various prior patents and the same are in the field of interest, the patent will be construed strictly according to its terms in determining infringement. Nelson v. Batson, supra; Moon v. Cabot Shops, Inc., 270 F.2d 539 (9th Cir. 1959); cert. denied 361 U.S. 965 (1960); San Marino Electronic Corp. v. George J. Meyer Co., supra.

16. Claims of the '540 patent are to be construed not only in light of specification and drawings, but also with reference to the file history; claims are to be explained by and read in conjunction with the specification and in the light of definitions and admissions made by the applicant. Moon v. Cabot Shops, Inc., supra; Bacon American Corp. v. Super Mold Corp. of Cal., 229 F.Supp. 998 (N.D. Calif. 1968); Oregon Saw Chain Corp. v. McCulloch Motors Corp., 323 F.2d 758 (9th Cir. 1963); Schnitzer v. California Corrugated Culvert Co., 140 F.2d 275 (9th Cir. 1944).

17. In order for the '540 patent to be infringed, each and every element of at least one of the claims of the patent must find its counterpart in the accused device. Nelson v. Batson, supra; Bacon American Corp. v. Super Mold Corp. of Cal., supra. Such is not present in the instant case as to any claim. (-See addendum at the foot of page 20 hereof.)

WPJ

18. Infringement of the '540 patent cannot be determined by a view of the purposes and results of the device described by the patent but must rather be determined by reference to the terms of the claims in view of the various considerations set out in Conclusions of Law Nos. 14-17 above. When the claims are so read, the Sperry AT/SC device does not infringe the claims of the '540 patent.

19. Furthermore, the claims of the '540 patent define a combination of elements as "means" for performing a combination of stated functions and are infringed only if the Sperry AT/SC device contains the devices described in the '540 patent for performing each of the stated functions or the equivalent thereof. Del Francia v. Stanthony Corporation, supra; Stearns v. Tinker & Rasor, supra; Bacon American Corp. v. Super Mold Corp. of Cal., supra; Garrett Corporation v. United States, 422 F.2d 874 (Ct. Cl. 1970).

20. The Sperry AT/SC system does not contain the devices described in the patent for performing the stated functions nor the equivalents thereof.

21. In order to constitute equivalency of the devices shown in the '540 patent, it must be established that each of the same, or substantially the same, functions are performed in the Sperry AT/SC system in substantially the same way to obtain the same results. Graver Tank & Mfg. Co., Inc. v. Linde Air Products, supra; Del Francia v. Stanthony Corporation, supra; Sanitary Refrigerator Co. v. Winters, 280 U.S. 30 (1929); Kemart Corp. v. Printing Arts Research Laboratories, 201 F.2d. 624 (9th Cir. 1953); San Marino Electronic Corp. v. George J. Meyer Co., supra.

22. The means for performing the combination of functions performed by the Sperry AT/SC system do not perform the same functions in the same way to achieve the same results as the combination of means of the '540 claims and thus are not the equivalents of those means for performing the stated functions.

23. Similarity, or even identity, of results alone is not a criteria of infringement and results are not per se patentable. Air Device v. Air Factors, 210 F.2d 481 (9th Cir. 1954) Westinghouse v. Boyden Power Brake Co., 170 U.S. 537 (1898).

24. Although the system disclosed in the '540 patent and the Sperry AT/SC system may accomplish similar overall results, the results are not the same. Even were the results accomplished by the two systems precisely the same, the systems are dissimilar as to the means of achieving these results or performing the various functions and therefore this Court concludes that the Sperry AT/SC system is not equivalent to the '540 device.

25. The Sperry AT/SC system is so different from the system disclosed in the '540 patent in construction, principles and method of operation that a conclusion that the two devices are equivalent or that there is infringement is precluded irrespective of the claims of the '540 patent. Westinghouse v. Boyden Power Brake Co., supra; SAAB v. Merganthaler Linotype Co., 410 F.2d 979 (2nd Cir. 1969); Curtiss-Wright Corp. v. Link Aviation, Inc., 182 F.Supp. 106 (N.D. N.Y. 1959); Decca Limited v. United States, 420 F.2d 1010 (Ct. Cl. 1970).

26. An invalid patent may not be infringed and the Court accordingly concludes that none of the claims here concerned are infringed by the defendants' AT/SC device. Moreover, even if the patent in suit were in any respect to be declared valid, the Court concludes that it is not infringed in light of Findings of Fact Nos. 34 through 47 and Conclusions of Law Nos. 14 through 25, subject to addendum to paragraph 17 hereof.

27. Defendants are entitled to an award of reasonable attorneys fees under 35 USC 285.

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28. Defendants are entitled to a judgment that the claims in issue of the '540 patent are invalid and not infringed. Defendants are further entitled to an award of costs.

March 4, 1971
William P. Gray
U. S. District Judge

Respectfully submitted,

SPENSLEY, HORN, JUBAS & LUBITZ

By: W. Robert Spensley
W. Robert Spensley
Attorneys for Defendants

~~DATED: January 22, 1971.~~

WPG

Addendum to paragraph 17:

However, if the subject patent should be interpreted to cover the combining of any signal indicative of lift, in the broadest sense of the term, with any signal indicative of forward acceleration of an airplane, no matter how these signals are derived, the Sperry system makes such combination, along with other parameters.

And if the subject patent covers any device that processes such combination into a director indication to the pilot, irrespective of the computational means by which such indication is created, and irrespective of the other parameters that are used in such computation, the Sperry device creates such a director indication.

I do not ascribe such breadth to the claims in suit and, a fortiori, would find them invalid were I to do so.

LODGED

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MAR 4 1971

CLERK, U. S. DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
By

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SAFE FLIGHT INSTRUMENT CORPORATION, a New York corporation, Plaintiff, vs. McDONNELL-DOUGLAS CORPORATION, a Maryland corporation, and SPERRY RAND CORPORATION, a Delaware corporation, Defendants.	CIVIL ACTION NO. 68-2129-WPG JUDGMENT

By prior Order of the Court, all claims relating to the validity of the '540 patent and infringement of United States Letters Patent No. 3,043,540 relating to the Sperry AT/SC system were severed for trial from the remaining alleged claims of plaintiff against Douglas relating to infringement of the DC-9 and unfair competition; for the convenience of the parties and the Court, the separate issues relating to the validity of the '540 patent and alleged infringement of said patent by said Sperry

NT/SC system came on to be heard before the Court and were tried commencing April 14, 1970 and concluding September 8, 1970.

Upon consideration of the record (including Transcripts and Exhibits), the post trial briefs of counsel and after argument by counsel, it being expressly determined that there is no just reason for delay and it being expressly directed that final judgment upon each and all of said severed claims be entered pursuant to Federal Rules of Civil Procedure 54(b), and upon the Findings of Fact and Conclusions of Law entered herein, it is hereby:

ORDERED, ADJUDGED AND DECREED that:

1. Plaintiff, Safe Flight Instrument Corporation, is the owner, by assignment, of United States Letters Patent No. 3,043,540;

2. All of the claims in issue of said Letters Patent are invalid;

3. Even if valid, defendants Sperry Rand has not infringed, and do not infringe said Letters Patent;

4. Plaintiff shall not bring suit or threaten suit on said Letters Patent as to defendants or any of defendants' customers;

5. Defendants recover from plaintiff, Safe Flight Instrument Corporation, its costs and disbursements in these proceedings as taxed by the Clerk, ~~and reasonable attorney fees.~~

~~ENTERT~~ William P. Gray
United States District Judge

DATED: March 4, 1971

I hereby attest and certify on 3-25-71 that the foregoing document is a full, true and correct copy of the original on file in my office and in my legal custody.

CLERK, U.S. DISTRICT COURT
CENTRAL DISTRICT OF CALIFORNIA
By [illegible] Deputy

Memorandum For Counsel

UNITED STATES DISTRICT COURT

CENTRAL DISTRICT OF CALIFORNIA

SAFE FLIGHT INSTRUMENT CORPORATION, Plaintiff, v. MCDONNELL-DOUGLAS CORPORATION, a Maryland corporation, and SPERRY RAND CORPORATION, a Delaware corporation, Defendants.	CIVIL No. 68-2129-WPG

At the time of our last meeting in open court, I advised counsel that I would study the post-trial briefs, as well as the selected references to depositions and to the transcript in the *United Controls* case. I indicated that upon doing so I would prepare for counsel a memorandum that would set forth my tentative views in order that they might be guided accordingly in preparation for oral argument. I have made the promised study, and in the course of doing so have also gone over considerable portions of the transcript, restudied many of the exhibits, and fully examined the notes that I took during the trial. This process has caused me to reach some conclusions that, while still tentative pending oral argument, are considerably more definite than I anticipated at the close of testimony.

In the interests of time and in the knowledge that it is directed only to counsel who are throughly familiar with the record and the issues, this memorandum is somewhat telegraphic and does not purport to be technically complete as to description of terms or functions. But, except as

otherwise noted, I think that I understand the general principles sufficiently to justify expressing the views herein contained.

1. I am inclined to believe that the '540 patent must be declared invalid because of obviousness, within the mean- of 35 U. S. C. § 103.

(a) The only significant difference between the '375 device and the '540 device is the addition of a gyroscope to the accelerometer used in the latter. The purpose of adding the gyroscope was to remove from the accelerometer signal the effect of pitch and thus get a more accurate signal as to the actual forward acceleration. In other words, '540= '375 minus *Theta.* Of course, it was well known in the art to use a gyroscope to remove from a pendulous accelerometer the effect of pitch. This is shown by the Sikora patent. It would seem to follow, then, that '540='375 plus Sikora.

(b) The plaintiff asserts (post-trial brief, page 27) that none of the prior art teaches the *combining* of:

(1) A lift signal (or angle of attack signal).

(2) A signal of forward acceleration *essentially independent of pitch.*

(3) An indication to the pilot (director signal or otherwise) of the results of such combination. Inasmuch as each of these three items is, in itself, old in the art, the only thing contributed by the plaintiff is the *combination* of *all three;* and, as above noted, '375 contains all three with the deletion of the underlined words in item (2) hereof.

But it seems to me that the *need* for just such combination was suggested to Mr. Greene by Mr. Shevelle and Miss Jones. The essence of those conversations was the articulation of the need for the pilot to have immediately available, at all times after VR, a combination of an accurate assessment of lift and acceleration along the flight path, so that he might climb as sharply toward C_L max as continued acceleration would permit. Inasmuch as the angle of climb so conceived would be relatively steep, it seems to me that a person skilled in the art would have no trouble in realizing that determination of acceleration along the flight path would necessitate removal of the effect of pitch from the accelerometer. To the person familiar with '375, this would immediately suggest the use of a gyroscope to remove the *Theta*. This appears to be precisely what occurred.

(c) In this connection, the plaintiff refers to a long-felt need to which '540 contributed a solution. It seems to me that this is considerably overstated. In November 1958, the passenger jets were in their infancy; the DC8 was not yet operational; and Douglas was in process of working out initially the techniques of taking off and landing these heavy and fast moving airplanes. The importance of combining angle of attack and flight path acceleration became apparent, at least to Mr. Shevelle and Miss Jones, in the course of the development of such pre-operational techniques, and, as mentioned before, Mr. Greene adapted his prior knowledge to produce the '540 solution virtually as soon as he was exposed to the problem. A skilled man was present at the right place at the right time; but what he contributed was not invention.

(d) The plaintiff contends that a further advance by '540 over '375 is that the display to the pilot is a *command*

signal rather than a displacement signal. While I think that I understand the difference between these two designations, I cannot fathom how the fast-slow needle in one device is entitled to a different classification than the needle in the other.

2. It seems to me that the '540 disclosure is not novel, within the meaning of 35 U. S. C. § 102.

(a) For the reasons hereinabove set forth, it was anticipated by the '375 disclosure.

(1) The Lear system discloses a combination of an angle of attack error system with a rate-of-change of air speed signal and produces a command signal for driving an automatic pilot. In seeking to distinguish the '540 patent from the Lear system, the plaintiff points out that "The first and fundamental difference is that nothing in the Lear program was intended to, nor did it indeed, provide a director signal or indication for display to the pilot." (Plaintiff's post-trial brief, page 22). I do not see how that makes any difference whatever. Neither director displays nor auto pilots are new, and the fact that the signals produced by a device are submitted as "commands" to a human pilot rather than to an automatic pilot does not save it from "anticipation".

(2) The Lear development was ". . . described in a printed publication in this . . . country . . . more than one year prior to the date of application for patent in the United States . . . ." (35 U. S. C. § 102(b)). For the reasons set forth in pages 97-100 and 180-185 of the defendant's post-trial brief, the ASTIA document constituted such publication.

(c) Because of the view I take that '375 and Lear require holding '540 invalid, I am inclined to refrain from undertaking to make a conclusion as to whether '540 is also anticipated by Joline, Jude, Fischel, McRuer, or the Sperry Zero Reader. If the necessity so to do is demonstrated to me, I shall act accordingly.

3. My tentative conclusion is that the Sperry Rand ATSC system does not infringe '540. If the test of infringement is simply whether or not Sperry included a lift signal and a forward acceleration signal among the ingredients brought together to provide a director indication, the answer might well be in the affirmative. But such a simplistic assessment would overlook a number of considerations that appear material:

(a) Professor Graham has examined the Sperry drawings that describe the ATSC system and asserts that he has found therein a "means responsive to lift" comparable to that claimed in the '540 patent. Because of my limited ability to read and understand the drawings, I acknowledgedly do not grasp the full purport of what Professor Graham found. However, it is apparent that Sperry does not seek to ascertain lift by simply sensing the angle of attack through the use of a stagnation point vane. As best I can understand the evidence, Sperry does not seek to *measure* angle of attack or lift; rather, it *computes* them on the basis of several parameters.

(b) In order for there to be infringement, Sperry's "means responsive to forward acceleration" must be *"essentially independent of pitch"*. The defendant insists, persuasively, that its determination of forward

acceleration is the product of a control equation that includes the acceleration of the aircraft *along the flight path.* To the extent that this is so, such acceleration would be quite different from ground plane acceleration and would in no sense be independent of pitch.

(c) The plaintiff's command indication stems from the comparatively simple combination of two signals that originate in the stagnation point vane and the accelerometer. As is indicated above, the Sperry device takes account of many more inputs (as set forth in Exhibit DO), which it runs through a computer in some sophisticated manner in order to produce an appropriate signal. This hardly constitutes adopting the disclosure of the patent and using it for the same purpose and in substantially the same manner as is taught by the '540 patent. To the extent that the combination of elements that make up the '540 patent can be found in the Sperry device, it is there only as a part of a much larger combination that Sperry conceived by building logically upon its own expertise and knowledge of the prior art.

(d) Both '540 and the Sperry system accomplish the same result to the extent that they both give comparable display signals to the pilot. The evidence contains substantial indication, however, that the resulting signals to the pilot would not be exactly the same in the two systems. But even assuming that the results would be precisely the same, the fact that the two systems are so different in the manner in which such results are accomplished, precludes a conclusion that the devices are equivalent or that there is infringement.

The trial and the concluding briefs contained many more points at issue than I have discussed in this memorandum.

I find it quite impracticable to try to cover them all here. I have studied them to the best of my ability, and they do not change, but for the most part tend to confirm, the views here expressed.

As is hereinabove indicated, the comments and conclusions contained in this memorandum are still tentative and are subject to modification by oral argument. However, they have been rather carefully and deliberately developed as the testimony, exhibits, and briefs of the parties have been considered. In the interests of time, and in the anticipation that these conclusions will not be drastically changed, it is requested that counsel for the defendants prepare, lodge and serve appropriate findings and judgment. The findings are not necessarily restricted to those aspects of the case on which I have commented, but they should nonetheless cover only matters that the defendants deem essential.

Rather than schedule a time for argument and a subsequent time for the settling of findings, it is proposed that we prepare to accomplish both at the same session. As soon as the proposed findings are received, I shall set a time for final argument and for consideration of such findings.

DATED: October 15, 1970.

WILLIAM P. GRAY
United States District Judge

Findings of Fact and Conclusions of Law

UNITED STATES DISTRICT COURT

WESTERN DISTRICT OF WASHINGTON

NORTHERN DIVISION

SAFE FLIGHT INSTRUMENT CORPORATION, a New York corporation, Plaintiff, *v.* UNITED CONTROL CORPORATION, a Delaware corporation; and UC LIQUIDATING CORPORATION, a Washington corporation, Defendants.	CIVIL ACTION No. 7268

1. Plaintiff, Safe Flight Instrument Corporation, hereinafter called Safe Flight, is a New York corporation having its principal place of business at White Plains, New York.

2. Defendant, United Control Corporation, hereinafter called United Control, is a Delaware corporation having its principal place of business at Redmond, Washington.

3. Defendant, UC Liquidating Corporation, is a Washington corporation formed as a successor to the original United Control Corporation, hereinafter called the original United Control. UC Liquidating was formed to effectuate the dissolution of that corporation and the transfer of its assets to United Control, which is a wholly owned subsidiary of the Sundstrand Corporation.

4. The Sunstrand Corporation is an Illinois corporation headquartered in Rockford, Illinois. In June, 1967 it acquired the entire stock of the original United Control Corporation of Washington, the predecessor of United Control.

5. This is a suit in equity arising under the patent laws of the United States which was instituted by the service of a complaint by the plaintiff, Safe Flight, against the original United Control, for infringement of three United States Letters Patent:

a. U. S. Pat. No. 3,043,540 ('540) entitled "Airplane Instruments" filed November 17, 1959* and issued July 10, 1962. Involved in this trial are claims 1-8, 17, 19, 20, 22 and 26.

b. U. S. Pat. No. 3,112,905 ('905) entitled "Airplane Instruments" filed May 24, 1961 and issued December 3, 1963. Involved in this trial are claims 1, 2, 3 and 11-14.

c. U. S. Pat No. 3,327,972 ('972) entitled "Airplane Instrument for Furnishing a Bias Signal to Offset the Effects of Forward Components of Gusts During Landing Approach" filed March 4, 1965 and issued June 27, 1967. Involved in this trial are claims 1, 3, 6, 7, 11-21 and 23-25.

Leonard M. Greene is the inventor of [each of] the patent in suit, and Safe Flight is the owner of [each of] the patent in suit.

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*The '540 patent has an effective filing date of October 14, 1959 for all of the subject matter contained therein except for the addition of Fig. 7 and the description thereof at col. 2, 1.23 and col. 2, 1.32 of the '540 Pat. [(Title 35 U. S. C. §§ 120; PX-1, col. 1, 1.9-12; DX-A 26; PX-98)].

6. On July 13, 1967 the original complaint was served and filed; on August 28, 1967 an amended complaint was served and filed substituting as defendants United Control, a subsidiary of the Sundstrand Corporation, and the UC Liquidating Corporation. Service was accepted by both defendants.

7. On September 15, 1967 the amended complaint was answered by both defendants. A further amended answer was served on behalf of United Control on August 30, 1968.

8. In October, 1958 Leonard M. Greene invented a director instrument and subsequently, on July 10, 1962, obtained a patent therefor which is the '540 patent here in suit. The plaintiff's commercial speed command system is sold under the trademark "SCAT". This system includes the director instrument of the '540 patent.

9. The SCAT speed command computer is presently used by numerous airlines throughout the world including Trans World Airlines. McDonnell-Douglas Corporation manufactures an aircraft identified as the DC-9. The first speed command system installed by McDonnell-Douglas on the DC-9 was SCAT. Thereafter, McDonnell-Douglas specified for the DC-9 a system having the attributes of SCAT.

10. Captain S. Gordon Granger, former director of Jet Operations and presently director of Flight Operations, Research and Development, Trans World Airlines described the SCAT instrument as essential in the take-off, missed approach, landing approach, and the engine-out operation

during take-off phases of jet aircraft operations. The Court believes Captain Granger's testimony.

11. During the course of the trial the Court rode on a DC9-30 aircraft and witnessed the SCAT system in operation under certain circumstances described by Captain Granger, i.e., during a series of take-offs, missed approaches, landings and one take-off during which an engine was turned off. The Court's observation during this demonstration ride confirms Captain Granger's testimony concerning the utility and usefulness of plaintiff's SCAT system.

12. The system of the '540 patent is specifically adapted to jet aircraft as contrasted to propeller driven aircraft because of the high angle of attack, high velocity of jet aircraft and the absence of slipstream. Propeller aircraft operate at lower angles of attack, less speed and in the presence of slipstream. There is no V_1 (decision point of take-off), V_R (rotation speed), or V_2 (velocity of climb out) problem propeller aircraft.

13. No one other than Leonard Greene, the inventor of the '540 patent, attempted to develop a command instrument for jet aircraft for use on take-off, missed approach and engine-out operation.

14. Leonard Greene experimented and developed the system of the '540 patent which is a new combination of old elements which generate a new signal.

15. The novelty of the '540 patent is the signal obtained thereby.

16. The signal developed by the '540 instrument and the combination of elements used to obtain the signal were not obvious to those skilled in the art to which the invention pertains. In this respect the Court believes the testimony of F. Dunstan Graham, a professor of aeronautical engineering at Princeton University presently on sabbatical leave and now serving as a professor at the University of Pennsylvania, and finds:

A. Prof. Graham had considerable experience as a pilot, and, at the times material, held a commercial pilot's license.

B. Prof. Graham had been working in the field of aircraft instrumentation for a number of years as an aerodynamicist and flight control engineer with Boeing Aircraft Company, Cornell Aeronautical Laboratory, Wright Air Development Center, and Lear, Inc. and was familiar with the autopilot circuits relied on by defendants.

C. Prof. Graham was directly responsible for the Lear project on which the defendant relied during the trial of this case.

D. Prof. Graham was somewhat familiar with the work Mr. Green was doing in the field of aircraft instrumentation.

In the opinion of Prof. Graham the prior patents, articles and publications cited to the Court do not sustain defendants' contention that the '540 patent was previously disclosed and was obvious. In this respect the Court credits Prof. Graham's testimony.

17. United States Letter Patent '375 does not anticipate the '540 patent because the '375 patent was designed for propeller aircraft. Use of the instrument of the '375 patent on jet aircraft was not contemplated for the purposes of the '540 patent.

18. Professor Graham demonstrated in open Court that the SCAT instrument of plaintiff and the accused instrument of defendant are interchangeable, using the same inputs and giving the same outputs; and testified that plaintiff's instrument and defendants' instrument are the same, with minor exceptions. This demonstration confirmed Professor Graham's testimony and the Court finds that plaintiff has established infringement of the claims in suit of the '540 patent by defendants' instrument.

19. The instrument disclosed in the '540 patent is operable.

20. The instrument of the '375 patent is a stall warning system advising the pilot of the approach of stall because of one or more factors, i.e., C_L/C_L max, which will enable the pilot to take the necessary steps in the operation of an aircraft to avoid loss of lift and consequent stall.

21. The instrument of the '540 patent gives a command indication that is used in take-off when jet aircraft are under full power directing the pilots to fly these aircraft at a specified angle of attack and at the pitch angle that will maintain proper angle of attack. To accomplish this result the system of the '540 patent uses inputs from a ground

plane accelerometer and an angle of attack or lift sensor from which it computes a director signal.

22. The Court credits the testimony of Professor Graham and Mr. Greene and plaintiff's Exhibit 72 insofar as they pertain to the SCAT system and the United Control system and finds that lift and angle of attack are synonymous.

23. As to the Lear project relied upon by the defendants, the Court finds that the subject matter of the '540 patent in suit was not disclosed thereby.

24. The instrument of the '540 patent is novel in its use of lift, i.e., angle of attack and the United Control brochure confirms the novelty of an instrument using angle of attack, i.e., lift. The '540 computer computes from the angle of attack and ground plane accelerometer inputs a command signal that is anticipatory. It avoids the inherent inaccuarcy caused by the lag and instability of an air speed indicator.

25. Mr. Greene spent some three years demonstrating the '540 SCAT system to many aerodynamicists and pilots, before Trans World Airlines, through its Director of Flight Operations, Research and Development, Captain Granger, recognized the merits of the signal produced by the SCAT system.

26. United Control Corporation had knowledge of the existence of the '540 patent and with such knowledge proceeded to manufacture and sell its accused speed command computer system.

27. The purpose of patent 3,112,905 is to provide a limit to the nose-up pitch attitude the pilot is directed to achieve. The pendulum signal during acceleration is a nose-up signal, the pitch limiting is accomplished by the expedient of limiting the amount of the swing of the pendulum by a stop. The stop in combination with the gyro creates a bias signal if the pitch limit is exceeded and directs a nose-down attitude. The system of the '905 patent is an improvement on the instrument shown in the '540 patent, but it is not an invention because the system shown in the '905 patent would be obvious to a person skilled in the art to which the invention pertains.

28. The purpose of the system shown in the 3,327,972 patent is to provide compensation for negative gusts during landing approach. The system of the '972 patent is an improvement on the instrument shown in the '540 patent, but it is not an invention because the system shown in the '972 patent would be obvious to a person skilled in the art to which the invention pertains.

Conclusions of Law

1. The Court has jurisdiction over the parties hereto and over the subject matter of the causes of action put in issue by the pleadings by virtue of 28 U. S. C. §§ 1338 and 1400.

2. United States Letters Patent No. 3,043,540 is owned by the plaintiff, Safe Flight Instrument Corporation, is valid, and claims 1 through 8, 17, 19, 20, 22 and 26 have been infringed by the defendants.

3. United States Letters Patent No. 3,112,905 is owned by the plaintiff, Safe Flight Instrument Corporation, and is invalid.

4. United States Letters Patent No. 3,327,972 is owned by the plaintiff, Safe Flight Instrument Corporation, and is invalid.

5. Plaintiff is entitled to a permanent injunction against further infringement of United States Letters Patent No. 3,043,540 by defendants.

6. The Court concludes that the plaintiff is entitled to damages against the defendants. The amount and method of computing these damages are reserved until the conclusion of any appeal which may be taken from the Judgment entered on these Findings and Conclusions or until such time as the period for appeal shall have expired and no appeal shall have been taken.

DATED: This 11th day of December, 1968.

Approved as to Form:

WILLIAM N. GOODWIN /s/
United States District Judge

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Final Judgment

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UNITED STATES DISTRICT COURT

WESTERN DISTRICT OF WASHINGTON

NORTHERN DIVISION

[SAME TITLE]

This cause having come regularly on for hearing by this Court, the parties hereto having entered into an agreement to settle this litigation, and the Court having been duly advised in the premises,

IT IS HEREBY ORDERED, ADJUDGED AND DECREED that:

1. Plaintiff's motion for a new trial as contained in the Order to Show Cause dated June 23, 1969 on the issue of obviousness of the United States Letters Patents 3,043,540, 3,112,905 and 3,327,972 is hereby granted.

2. Plaintiff's motion for a new trial on the unfair competition issue is withdrawn.

3. That portion of the judgment in favor of the plaintiff on the issues of validity and infringement by defendants of United States Letters Patent No. 3,043,540, previously entered herein on December 11, 1968, is affirmed.

4. The judgment previously entered herein on December 11, 1968 is hereby modified and defendants consent to modifications in the Findings of Fact and Conclusions of Law and to the entry of this Final Judgment in favor of the plaintiff on the issues of validity and infringement of United States Patent Nos. 3,112,905 and 3,327,972.

5. Findings of Fact Nos. 27 and 28 previously entered hereon on December 11, 1968 are hereby supplemented and amended to read as follows:

> "27. The purpose of patent 3,112,905 is to provide a Limit to the nose-up pitch attitude the pilot is directed to achieve. The pendulum signal during acceleration is a nose-up signal the pitch limiting is accomplished by the expedient of limiting the amount of the swing of the pendulum by a stop. The stop in combination with the gyro creates a bias signal if the pitch limit is exceeded and directs a nose-down attitude. The system of the '905 patent is a nonobvious improvement on the instrument shown in the '540 patent and is inventive and patentable.
>
> "28. The purpose of the system shown in the 3,327,972 patent is to provide compensation for

negative gusts during landing approach. The system of the '972 patent is a nonobvious improvement on the instrument shown in the '540 patent, and is inventive and patentable."

6. Conclusions of Law Nos. 3 and 4 previously entered herein on December 11, 1968 are hereby deleted, and Nos. 2 and 5 are hereby supplemented and amended to read as follows:

"2. United States Letters Patent No. 3,043,540 is owned by the plaintiff, Safe Flight Instrument Corporation, is valid and claims 1 through 8, 17, 19, 20, 22 and 26 have been infringed by the defendants. United States Letters Patent No. 3,112,905 is owned by the plaintiff, Safe Flight Instrument Corporation, is valid and claims 1, 2, 3 and 11-14 have been infringed by the defendants. United States Letters Patent No. 3,327,972 is owned by the plaintiff, Safe Flight Instrument Corporation, is valid and claims 1, 3, 6, 7, 11-21 and 23-25 have been infringed by the defendants.

"5. Plaintiff is entitled to a permanent injunction against further infringement of United States Letters Patent Nos. 3,043,540, 3,112,905 and 3,327,972 by defendants."

7. The Order signed by this Court on December 23, 1968 suspending the injunction contained in paragraph 2 of said judgment of December 11, 1968 is hereby revoked and said injunction is modified to read as follows: The defendants, their officers, agents, servants, employees and attorneys who receive actual notice of this Final Judgment

by personal service or otherwise, are hereby permanently enjoined from infringing said claims of United States Letters Patent Nos. 3,043,540, 3,112,905 and 3,327,972, subject to the provisions of Title 28 U. S. A., Section 1498.

8. Plaintiff is granted a Final Judgment for damages against defendants, jointly and severally, in the amount of $2,500,000.00, and costs of this action as taxed by the Clerk.

So Ordered.

DATED this day of July, 1969.

/s/ WILLIAM N. GOODWIN
United States District Judge

Consented to this 31st day of July, 1969.

[Names illegible]
Of Attorneys for Defendants

Presented by:

THOMAS M. MARSHALL
Of Attorneys for Plantiff